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Letter dated 14 April 2003 from the Secretary-General addressed to the President of the Security Council

I have the honour to refer to the attached communication, dated 11 April 2003, from the Director General of the International Atomic Energy Agency (see annex).

I should be grateful if you would have this circulated as a document of the Security Council.

(*Signed*) Kofi A. **Annan**

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Annex

Letter dated 11 April 2003 from the Director General of the International Atomic Energy Agency addressed to the Secretary-General

In paragraph 16 of its resolution 1051 (1996), adopted on 27 March 1996, the Security Council called for the consolidation of the periodic requirements for progress reports on relevant IAEA activities in Iraq under resolutions 699 (1991), 715 (1991) and 1051 (1996), and requested the Director General to submit such consolidated reports every six months to the Council, commencing on 11 April 1996.

I should therefore be grateful if you would arrange for the enclosed fifteenth consolidated biannual report to be distributed as a document of the Security Council.

(*Signed*) Mohamed **ElBaradei**

Enclosure

Fifteenth consolidated report of the Director General of the International Atomic Energy Agency under paragraph 16 of Security Council resolution 1051 (1996)

INTRODUCTION

1. In paragraph 16 of resolution 1051 (1996), the Security Council called for the consolidation of the periodic progress reports required under resolutions 699 (1991), 715 (1991) and 1051 (1996), and requested the Director General of the International Atomic Energy Agency (IAEA) to submit such a consolidated report every six months to the Council, commencing on 11 April 1996.

2. The Director General submits herewith the fifteenth[1] such consolidated report under paragraph 16 of resolution 1051 (1996). The report provides a description of the work in relation to Iraq done by the IAEA between 1 October 2002 and 1 April 2003. The report includes the period between 27 November 2002 and 17 March 2003, during which the IAEA was able to resume the implementation of its Security Council mandate in Iraq following the adoption of resolution 1441 (2002) by the Council on 8 November 2002.

3. Following the resumption of the IAEA's Security Council-mandated activities in Iraq in November 2002, the Council requested several updates. The IAEA provided these updates in the form of a report (Update Report for the Security Council pursuant to resolution 1441[2], dated 27 January 2003) and oral statements to the Security Council by the Director General (on 19 December 2002, 9 January 2003, 27 January 2003, 14 February 2003 and 7 March 2003). Finally, the "Work Programme of the International Atomic Energy Agency in Iraq pursuant to Security Council Resolution 1284 (1999)" was provided to the Security Council on 20 March 2003[3].

IAEA ACTIVITIES AND ACHIEVEMENTS

Background

4. The Director General's report of 8 October 1997 to the Security Council provided a comprehensive summary of IAEA activities and findings in connection with the investigation, destruction, removal and the rendering harmless of Iraq's clandestine nuclear weapons programme (S/1997/779). The report reflected the coherent picture of Iraq's programme and the IAEA's conclusion, based on that picture, that there were no indications of Iraq having retained any physical capability for the indigenous production of weapon-usable nuclear material in amounts of any practical significance as of the date of the report. Furthermore there were no

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[1] The previous consolidated reports of the Director General of the International Atomic Energy Agency were circulated as documents: S/1996/261 of 11 April 1996; S/1996/833 of 7 October 1996; S/1997/297 of 11 April 1997; S/1997/779 of 8 October 1997; S/1998/312 of 9 April 1998; S/1998/927 of 7 October 1998; S/1999/393 of 7 April 1999; S/1999/1035 of 7 October 1999; S/2000/300 of 11 April 2000; S/2000/983 of 11 October 2000; S/2001/337 of 6 April 2001; S/2001/945 of 5 October 2001; S/2002/367 of 16 April 2002; and S/2002/1150 of 16 October 2002. Document S/1998/694, dated 27 July 1998, contained the text of an interim status report provided in response to the Security Council presidential statement dated 14 May 1998 (S/PRST/1998/11). Document S/1999/127, dated 9 February 1999, contained the text of an interim status report provided in response to the note by the President of the Security Council dated 30 January 1999 (S/1999/100).

[2] Document S/2003/95.

[3] Document S/2003/342.

indications that Iraq had achieved its programme goal of producing nuclear weapons, though it was clear that Iraq had made significant progress prior to April 1991 in the technologies related to the production of nuclear weapons.

5. As of December 1998, there were no unresolved disarmament issues in the nuclear area, although there were still a number of questions and concerns about Iraq's past nuclear programme. The clarification by Iraq of these questions and concerns, which were raised in the IAEA reports to the Security Council dated 7 October 1998 and 9 February 1999 (S/1998/927 and S/1999/127, respectively), would have reduced the remaining uncertainties about Iraq's programme. Nevertheless, they did not preclude the implementation of the IAEA's Plan for Ongoing Monitoring and Verification in Iraq (the OMV Plan), as their existence had already been factored into the Plan.

6. During the intervening four-year absence of the IAEA from Iraq, the IAEA continued its analytical work, using satellite imagery and other sources of information. However, this was no substitute for on-site inspections, nor for the implementation of ongoing and monitoring verification. The key issue for the IAEA had become whether Iraq had revived its prohibited nuclear programme, or related activities. It was against this background that inspections were resumed, with the provision by Iraq on 1 October 2002 of the backlog of semi-annual monitoring declarations and the adoption by the Security Council on 8 November 2002 of resolution 1441 (2002).

High Level Meetings

7. During the period covered by this report, the Director General, together with the Executive Chairman of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC), travelled three times to Iraq, on 18–19 November 2002, 19–20 January 2003 and 9 February 2003. These meetings permitted the refinement and extension of the practical arrangements which had been endorsed in paragraph 6 of resolution 1441 (2002), and which were prerequisites for the resumption of inspections in Iraq. These meetings, which included technical discussions with the Iraqi counterpart, resulted in substantive co-operation on the part of Iraq, and affirmations that it was committed to providing the co-operation required by the relevant resolutions.

Inspection Activities

8. On 18 November 2002, an advance team of the IAEA commenced work at the Baghdad Ongoing Monitoring, Verification and Inspection Centre (BOMVIC) to re-establish the IAEA field office, with logistical support from UNMOVIC, in preparation for the arrival of inspection teams. By the time of the arrival of the first group of inspectors on 25 November 2002, office space, the radiometric measurement laboratory, a secure computer network and the telecommunication systems were in place.

9. In the period under review, IAEA teams consisting, on average, of 14 inspectors and other experts, carried out 237 inspections at some 148 locations, including 27 new locations. More than 1600 different buildings were inspected. Inspections were undertaken at State-run and private industrial facilities, research centres and universities, either at locations where Iraq's significant technical capabilities were known to have existed in the past or at new locations suggested by remote monitoring and analysis or identified by other States. The IAEA sought to determine what, if anything, had occurred in Iraq over the past four years relevant to the

establishment of nuclear capabilities. The vast majority of the inspections were carried out with no prior announcement; a number of them were conducted in co-operation with UNMOVIC.

10. The thirteenth radiometric survey of Iraq's main watercourses was carried out from 9 to 19 December 2002, and 91 ore concentrate, sludge, biota, sediment, filter and water samples were collected. The results of these activities have confirmed the sensitivity of the survey technology by detecting the permitted use by Iraq of radioisotopes in medical applications. In addition to this survey a broad variety of nuclear and non-nuclear material, environmental, oil and swipe samples (85 in total) were collected from various locations across Iraq.

11. Other IAEA activities included the reinstatement of aerosol sampling and the land- and vehicle-based radiometric surveys. Previously installed air-particulate samplers were removed from Iraq in December 2002, refurbished, and reintroduced in January 2003. One air sampler was installed at a fixed location and the other two were utilized as mobile samplers being moved periodically from one location to another. The land- and vehicle-based surveys, as well as hand-held radiometric (gamma) screening, commenced in early December 2002. Over a period of 75 days, the IAEA conducted 125 surveys (separate from inspections) at State, industrial and military locations as well as in urban areas. Of these surveys, 42 were performed at locations not previously visited by the IAEA. In performing the surveys, the vehicle travelled a distance of about 8000 kilometres.

12. The IAEA also implemented a programme aimed at understanding Iraq's procurement pattern. In addition to ad-hoc inspections related to procurement activities, an IAEA team of technical experts, customs investigators and computer forensic specialists conducted a series of inspections at private and government-owned trading companies and at procurement departments within government manufacturing facilities. During these inspections, approximately 4000 pages were copied and 100 gigabytes of computer data retrieved. In this context, the IAEA obtained information on tenders, offers, contracts, delivery documentation, and technical and commercial correspondence. The analysis of this large volume of data is still in progress. The IAEA expects to continue to deepen its understanding on trading companies and suppliers of goods or services located outside Iraq with the support of the relevant governments.

Ongoing Monitoring and Verification

13. In accordance with paragraph 7 of resolution 1284 (1999), the IAEA submitted to the Security Council on 20 March 2003 its work programme, which included the key remaining disarmament tasks to be completed by Iraq (S/2003/342). The work programme also anticipates actions that might need to be taken in the event of the discovery of new information giving rise to concerns about the resumption by Iraq of its nuclear programme.

14. The basis of the IAEA's ongoing monitoring and verification system remains the plan approved by the Security Council through resolution 715 (1991) (S/22872/Rev.1/Corr.1). As foreseen in 1991, and as implemented through December 1998, ongoing monitoring and verification entails: comprehensive and regular reporting by Iraq on its activities, as well as on its exports and imports; unconditional and immediate access for unannounced inspections at any site deemed necessary by the IAEA, regardless of whether the site has been previously inspected; the conduct of location-specific and wide-area environmental monitoring, including the collection of various types of samples; real time monitoring for the detection of radiation signatures; and the introduction of new technologies and methods of verification.

Review of Contracts for the Sale or Supply of Commodities and Products

15. Security Council resolution 1409 (2002) mandates the IAEA to analyse contract applications submitted by States to the Office of the Iraq Programme (OIP) for the sale or supply to Iraq of commodities and products. The IAEA has been reviewing contracts against Section D (Nuclear) of the Goods Review List (GRL) published as document S/2002/515. Resolution 1409 (2002) also calls upon the IAEA to prepare assessments of the humanitarian, economic and security implications of the approval or denial of applications involving GRL items.

16. The implementation of this new mandate required the recruitment of personnel with a wide technical and commercial knowledge base and the development of an auditable data transfer/reviewing system. The system has allowed internal processing via fast tracking for humanitarian contracts and more complex routes for more complex technical contracts.

17. The knowledge and experience gained through the IAEA's review of applications to sell or supply single and dual-use items has become a valuable asset integrated in the IAEA's overall assessment of Iraq's nuclear-related capabilities. During the period between the inception of the system on 14 May 2002 and 31 March 2003, the IAEA completed the review of 9965 contract communications. Five impact assessments were undertaken on contracts containing dual use items. The table below provides a summary of IAEA assessments during that period:

Type of Determination	Number of Assessments	Percentage of Total
Contained prohibited item(s)	9	0.1 %
Contained GRL-related item(s)	69	0.7 %
Contained no GRL-related items	8734	87.6 %
Needed additional information	366	3.7 %
Fast tracked	733	7.4 %
Withdrawn after submission	54	0.5 %

PROVISION OF SUPPORT BY THIRD PARTIES

UNMOVIC

18. As requested by the Security Council in resolution 1284 (1999), UNMOVIC provided assistance and co-operation to the IAEA. This included logistical support such as the provision of adequate workspace in the refurbished BOMVIC, local and long distance communication for both voice and data, ground and air transportation with rotary and fixed wings aircraft, medical support and other administrative assistance. On numerous occasions, inspection teams of the IAEA included experts from UNMOVIC, and vice-versa.

States

19. Prior to the resumption of inspections in November 2002, the IAEA had kept its Iraq Nuclear Verification Office (INVO) in place, although with a reduced size. Although it was able to rely on the remaining INVO staff, and to draw on the roster of experienced inspectors from within the IAEA's Department of Safeguards, it hired, as a matter of urgency, new staff. At the request of the IAEA, States and certain organizations, such as the European Commission and the League of Arab States, provided lists of experts with the relevant expertise and experience, from which the IAEA was able to supplement its verification staff.

20. In order to enhance its effectiveness and obtain additional technical capability not yet currently available in house, the IAEA sought the support of States in the identification of new equipment and the modification and re-installation of equipment previously used. For instance, a State that had been involved with the development and installation of the air samplers operational in Iraq in 1998 provided support in the refurbishing of the samplers. Together with the IAEA's own laboratories, State laboratories that participate in the IAEA's analytical laboratory network contributed to the provision of analytical results of samples, sometimes under very tight time constraints.

21. To strengthen its investigative capabilities and reinforce the credibility of its conclusions, the IAEA repeatedly called on States to provide actionable information of direct and current value relevant to the IAEA mandate, so that the inspection process could be accelerated and the additional assurances generated. Towards the end of the recent inspections, an increase in the provision of such information was observed. However, the nature and extent of that information remained limited.

22. The IAEA has for some time sought the support of States in interviewing Iraqi exiles. In recent weeks, the IAEA was able to conduct interviews, outside of Iraq, of three such individuals.

IRAQ'S CO-OPERATION

Declarations

23. Paragraph 22 and Annex 2 of the OMV Plan require Iraq to provide the IAEA with semi-annual declarations about its nuclear and nuclear-related activities, as well as relevant exports and imports. Iraq submitted to the IAEA its backlog of semi-annual declarations for the period June 1998 to July 2002 in October 2002. On 16 December 2002 Iraq submitted an improved semi-annual declaration for that same period, along with explanations of some of the changes related to items reported in the declarations. Iraq has also submitted to the IAEA the semi-annual declaration, which was due in January 2003, covering the second half of 2002.

24. In response to paragraph 3 of resolution 1441 (2002), Iraq submitted its "currently accurate, full, and complete declaration" (CAFCD) to the IAEA on 7 December 2002. The Iraqi declaration was consistent with the IAEA's existing understanding of Iraq's pre-1991 nuclear programme; however, it did not provide any significant new information relevant to the questions and concerns outstanding since December 1998, in particular regarding Iraq's progress prior to ~~1991~~ related to weapons design and centrifuge development and to external assistance.

Access to locations and documents

25. Between November 2002 and 17 March 2003, Iraqi authorities provided access to all facilities requested by the IAEA, including presidential compounds, private residences and new sites, without conditions or delay. In response to requests by IAEA inspectors during inspections and through more formal channels, the Iraqi authorities made available over 7000 pages of additional original and photocopied documentation. In addition, a large number of documents that detail Iraq's pre-1991 laser enrichment programme were found in the home of a former Iraqi scientist.

Access to Personnel

26. Iraq provided an updated list of 430 key technical staff involved in the past programme and their current work locations. The list covered the great majority of essential staff, with some specific focus on former members of the group working on centrifuge development.

27. Some interviews were conducted with individuals and groups in their workplaces as part of the inspection activities, while others were conducted during pre-arranged meetings with key scientists and others known to have been involved with the past Iraqi nuclear programme. Under the authority provided by resolution 1441 (2002), the IAEA was able to interview 17 individuals selected by the IAEA at locations chosen by the IAEA. Some restrictions were imposed on the IAEA at the beginning, when interviewees first refused to be interviewed without the presence of an Iraqi observer. Subsequently, interviewees accepted to be seen alone, but requested that their interviews be taped. Ultimately, two individuals accepted to be interviewed in private and without being taped. Most of these interviews proved to be of significant help in improving the IAEA's understanding of the current state of Iraq's nuclear-related capabilities.

28. The IAEA had not reached the stage of conducting interviews abroad with Iraqi nationals as contemplated in paragraph 5 of resolution 1441 (2002). However, before inspections were suspended, it was able to resolve the modalities associated with the implementation of such interviews, including those related to the location of the interviews abroad and the required guarantees for asylum, if desired, and the identification of individuals to be interviewed abroad.

ASSESSMENT OF IRAQ'S NUCLEAR-RELATED CAPABILITIES

Basis of the Assessment

29. As of 17 March 2003, the IAEA did not find in Iraq any evidence of the revival of a nuclear programme prohibited under resolutions 687 (1991) and 707 (1991). However, the time available for the IAEA before inspections were suspended was not sufficient to permit it to complete its overall review and assessment. This review would have required further investigation of various types of assets needed for Iraq to develop a nuclear programme, as well as investigation of all the possible processes of nuclear weapon development.

Review of assets

Infrastructure, Equipment and Materials

30. The industrial capacity in Iraq has deteriorated substantially over the past decade, mainly due to the lack of equipment and the lack of consistent maintenance by Iraq of sophisticated equipment. All previously inspected and tagged critical machine tools were accounted for. At a few inspection sites, new machine tools had been installed and, at a few others, machine tools which had been inoperative in 1998 were retrofitted.

Expertise

31. Many areas of Iraqi expertise seem to have gone through significant depletion through the years, particularly as a result of the departure of many qualified staff. For instance, based on the list provided by Iraq and interviews conducted with centrifuge enrichment experts, the IAEA has obtained a more detailed understanding of the responsibilities and expertise of many former members of the group that conducted all of Iraq's centrifuge enrichment research and development work from 1987 to 1991. Less than a third of this staff remained in the company

that succeeded that group, and the core of expertise that existed in 1990 appears to have been largely disbanded.

Review of programme components

Nuclear Material Availability

32. All known procured, indigenously produced and practically recoverable uranium compounds which were not removed by 1994, in accordance with resolution 687 (1991), have remained in the custody of the IAEA, and are presently stored under IAEA seal. This includes the depleted uranium imported in 1979, natural uranium imported in 1979 and 1981–1982, low enriched uranium imported in 1982, yellow cake produced at the Al Qaim facility, uranium dioxide and uranium tetrachloride produced by the Al Jesira facilities, and uranium compounds produced at Tuwaitha. After the resumption of inspections in November 2002, verification of the nuclear material subject to IAEA safeguards which is stored in the nuclear material store of Tuwaitha "Location C", was performed from 9 to 11 December 2002. The inspection activities (i.e. item counting, tag checks, gross defect tests, enrichment measurements and weighing) did not uncover any discrepancies.

33. Iraq's nuclear material production capabilities have been systematically explored by the IAEA. While the indigenous phosphate mine has continued to be exploited and the Al Qaim phosphate plant has continued to produce fertilizer, no indication was found of the revival of any facilities destroyed in 1991 that had been related to uranium concentration or conversion. Additional information provided in the CAFCD and during technical meetings with the counterpart has contributed towards the revision of the estimate of the Al Jesira plant hold-up and has subsequently reduced the unaccounted for loss for this facility.

34. The IAEA investigated reports that centred on documents provided to it by a number of States that pointed to an agreement between Niger and Iraq on the sale of uranium to Iraq between 1999 and 2001. Based on its analysis, the IAEA concluded, with the concurrence of outside experts, that these documents were in fact forged documents. The IAEA therefore concluded that these specific allegations were unfounded. However, as the IAEA pointed out to the Security Council, it could not automatically be extrapolated from this that Iraq had never sought to import uranium, and the IAEA would continue to investigate the matter.

Centrifuge Enrichment

35. During the four years preceding the resumption of inspections in Iraq, there was much speculation about the possible revitalization of a gas centrifuge enrichment programme in Iraq. Of main concern were the efforts of Iraq to procure high strength quality aluminium tubes, declared for use in an unguided rocket programme, as possible cylinders in a gas centrifuge programme. The IAEA conducted a thorough investigation of Iraq's attempts to purchase large quantities of such tubes. As previously reported, Iraq has maintained that these aluminium tubes were sought for rocket production. Extensive field investigation and document analysis have failed to uncover any evidence that Iraq intended to use these tubes for any project other than the reverse engineering of rockets. The IAEA will continue to investigate the matter.

36. Apart from Iraq attempting to procure high strength aluminium tubes for unguided rocket manufacturing, Iraq has also been attempting to manufacture such tubes through use of its flow forming machine tool capability. From pre-December 1998 monitoring, the IAEA was aware of the limited flow forming capability in Iraq. Recent inspections re-affirmed this assessment. In particular, Iraq possesses a large quantity of high strength aluminium materials and has the

ability to produce preforms of the necessary quality for flow forming. However, the output from machine tools is of low quality.

37. Since December 1998, Iraq has purchased high-strength magnets for various uses and has declared inventories of magnets of twelve different designs. The IAEA has verified that previously acquired magnets have been used for missile guidance systems, industrial machinery, electricity meters and field telephones. Through visits to research and production sites, reviews of engineering drawings and analyses of sample magnets, IAEA experts familiar with the use of such magnets in centrifuge enrichment have verified that none of the magnets that Iraq has declared could be used directly for a centrifuge magnetic bearing and that Iraq has not achieved the capability for producing such magnets. However, investigations with foreign manufacturers that were contacted by Iraq are ongoing.

Other Enrichment routes

38. The IAEA has not observed any indication related to other enrichment routes, such as the electromagnetic isotopic separation process (EMIS) that was favoured by Iraq in the 1980s.

39. Nothing contained in the documents related to Iraq's pre-1991 laser enrichment programme which were found at the home of a former Iraqi scientist altered the conclusions previously drawn by the IAEA concerning the extent of Iraq's laser enrichment programme. Nor did they contain any evidence of efforts by Iraq to resume research in this field after 1991.

Weapons Development Related Activities

40. No indication of post-1991 weaponization activities was uncovered in Iraq. However, to draw a definitive conclusion in that regard, the IAEA would have needed additional time. Assurances that there are no weaponization capabilities in Iraq are essential not only for ensuring that any possible undetected domestically produced weapons-grade material could be transformed into a nuclear device, but also for ensuring that no illegally imported or smuggled weapons-grade material can be so used.

41. As Iraq's weapons route was an implosion system, mastering high explosive technology would be an essential factor for success. In the backlog of the Iraqi semi-annual declarations provided to the IAEA in October 2002, statements were included on the relocation and consumption of HMX for civilian use. In the declarations, Iraq stated that, between 1998 and 2002, it had transferred 32 of the 228 tonnes of HMX, which had been under IAEA seal as of December 1998, to other locations. In addition, Iraq stated that a very small quantity (46 kg) of HMX had been used at munitions factories for research and development.

42. IAEA inspectors have been able to verify and re-seal the remaining balance of approximately 196 tonnes of HMX, most of which has remained at the original storage location, documented the paper trail from removal to end-use of the removed HMX and conducted inspections at the sites where the HMX has been used according to Iraqi statements. Soil and swipe samples have confirmed the presence of HMX at the inspected sites declared to have stored that material. While the IAEA have no indication that this material was used for any application other than that declared by Iraq, there is no technical method of verifying, quantitatively, the declared use of the material in explosions.

CONCLUSION

43. In the nearly four months during which the IAEA was able to conduct inspections in Iraq, significant progress was made in assessing the status of Iraq's nuclear-related capabilities. On 17 March 2003, the IAEA, in consultation with the President of the Security Council and the United Nations Secretary-General, had to withdraw its staff from Iraq, as part of the decision to withdraw the staff of UNMOVIC and other UN staff, out of concern for their safety and following an advisory of upcoming military action.

44. As of 17 March 2003, the IAEA had found no evidence or plausible indication of the revival of a nuclear weapons programme in Iraq. Nevertheless, this does not mean that the IAEA had completed its investigations on whether Iraq had attempted to revive its nuclear programme between 1998 and 2002. Provided that Iraq's co-operation had remained active, and barring unforeseen circumstances, the IAEA would have been able to provide the Security Council with credible assurance regarding the absence of such revival within two to three months of continuing verification activities. However, any such assurance, as with any verification process, would have had a degree of uncertainty. It is for that reason that the IAEA, as requested by the Security Council, would have moved to the implementation of its reinforced OMV system, which was designed to act as an effective deterrent to and insurance against resumption by Iraq of its nuclear weapons programme, while permitting the IAEA to continue to look for possible past activities, thus providing the international community with an ongoing and real-time assessment of Iraq's compliance with its obligations.

45. While the implementation of the IAEA mandate in Iraq has been interrupted because of the ongoing military action, the IAEA's mandate in Iraq, pursuant to Iraq's Safeguards Agreement to the Treaty on the Non-Proliferation of Nuclear Weapons and the relevant Security Council resolutions, remains valid and thus not changed. The IAEA, as the sole legal authority to verify Iraq's nuclear activities, remains ready, subject to Security Council guidance, to resume its verification activities as soon as conditions permit.